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What Impairments have the likelihood to Improve?: Speech-Language Pathology and Audiology

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Disclosure

- Dr. Robinson has not financial disclosure for the content of this presentation
- Dr. Robinson's non-financial disclosure is that he is a former president of the American Speech-Language-Hearing Association (ASHA)

Statistics on Communication Disorders

- Nearly 1 in 12 (7.7 percent) U.S. children ages 3-17 has had a disorder related to voice, speech, language, or swallowing in the past 12 months
- The prevalence of voice, speech, language, or swallowing disorders is highest among children ages 3-6 (11.0 percent), compared to children ages 7-10 (9.3 percent), and children ages 11-17 (4.9 percent).
- Nearly one in 10, or 9.6 percent, of black children (ages 3-17) has a voice, speech, language, or swallowing disorder, compared to 7.8 percent of white children and 6.9 percent of Hispanic children

Improvement Defined

- The act of process of making something better
- The quality of being better than before

Communication Disorders At-Risk Categories

- Low Birth Weight/Premature Birth
- History of Ear Infections
- Deafness/Hard of Hearing
- Cognitive Impairments
- Craniofacial Anomalies
- Ototoxic Medications
- Autism Spectrum Disorder
- Noise Exposure
- Traumatic Head injury
- Syndromes
- Maternal Infection during Pregnancy
- Cytomegalovirus (CMV)
- Extended NICU Stay
- Meningitis (bacterial)
- Family History of Communication Disorders
- Dramatic Changes in Life

Speech, Language, Hearing and Related Disorders

Speech	Language	Hearing	Other
Phonological <ul style="list-style-type: none"> • Specific patterns • Delayed speech 	Receptive Difficulties <ul style="list-style-type: none"> • Understanding/comprehension • Auditory Processing Disorders 	Hard of Hearing	Literacy Swallowing
Articulation <ul style="list-style-type: none"> • Specific sounds omissions or substitutions • Distorted sounds 	Expressive Difficulties <ul style="list-style-type: none"> • Vocabulary • Word finding • Linguistic organization 	Ear Infections	Feeding Autism
Motor Speech <ul style="list-style-type: none"> • Apraxia of speech • Dysarthria of Speech 	Pragmatics <ul style="list-style-type: none"> • Turn taking • Maintaining topic • Topic exchange • Introduce new topic • Closing conversation 	Deafness	Bilingualism Culture
Voice <ul style="list-style-type: none"> • Quality (Tone and Pitch) • Resonance 	Nonverbal <ul style="list-style-type: none"> • Inability to understand • Proximity 	Cochlear implants BAHA Hearing Aids	Cognition Vestibular/Balance Written language
Speech Fluency <ul style="list-style-type: none"> • Stuttering • Cluttering 	Delayed Language	Auditory Process Disorder (ages 7 – 12)	Augmentative/Alternative Communication

What impairments have a likelihood to improve?

- All communication disorders have a likelihood to improve
 - Identification
 - Assessment
 - Treatment by a Speech-language Pathologists
 - Appropriate amplification by the audiologist when applicable

American Speech-Language-Hearing Association (ASHA) RESOURCES

- ASHA National Center for Evidence Based Practice in Communication Sciences and Disorders (NCEP)
- ASHA National Outcomes Measurement Systems (NOMS)

Functional Communication Measures (FCMs)

- A series of seven-point scales, to assess functional change in communication and swallowing over time

SAMPLE PRE-KINDERGARTEN FCM

- ***Spoken Language Comprehension***
- **LEVEL 1:** Child understands a limited number of common object and action labels and simple directions only in highly structured, repetitive daily routines, with consistent maximal cueing.
- **LEVEL 2:** Child understands a limited number of common objects and action labels and simple directions only in highly structured repetitive daily routines.
- **LEVEL 3:** Child understands a limited number of common objects and action labels and simple directions in novel situations.
- **LEVEL 4:** Child understands simple word combinations/sentences. Child usually requires rephrasing and repetition to ensure understanding of brief conversations.
- **LEVEL 5:** Child understands brief conversations. Child usually requires rephrasing and repetition to ensure understanding of the type and length of sentence typically understood by chronologically age-matched peers.
- **LEVEL 6:** Child understands communications of the type and length typically understood by chronologically age-matched peers but occasionally requires rephrasing and repetition. Child's ability to participate in adult-child, peer, and group activities is sometimes limited by language comprehension.
- **LEVEL 7:** Child's ability to participate in adult-child, peer, and group activities is not limited by language comprehension. Repetition and rephrasing are rarely required.

REPORT HIGHLIGHTS

- Spoken language production was the most frequently treated disorder (59.3%), while cognitive orientation was the least treated (2.9%).
- The majority of SLP intervention was done on a one-on-one basis regardless of the functional disorder being treated.
- On average, children received SLP services one time per week for 46-60 minutes.
- For each FCM, more than half of the children made demonstrable progress following SLP intervention, including those who were admitted with lower functional communication and/or swallowing abilities.
- Increases in number of treatment sessions and hours of treatment for the top FCMs addressed resulted in more children making progress.

Table 1: Race/Ethnicity

Race/Ethnicity Percent

White 53.3%

Black or African American 19.9%

Hispanic or Latino 17.3%

Asian 4.0%

American Indian or Alaska Native 1.0%

Native Hawaiian or Other Pacific Islander 0.4%

Unknown 6.6%

*Percentages may total more than 100%
because a patient may have selected multiple
race/ethnicity
categories.*

Figure 1: Gender

Female 29.9%; Male 70.1%

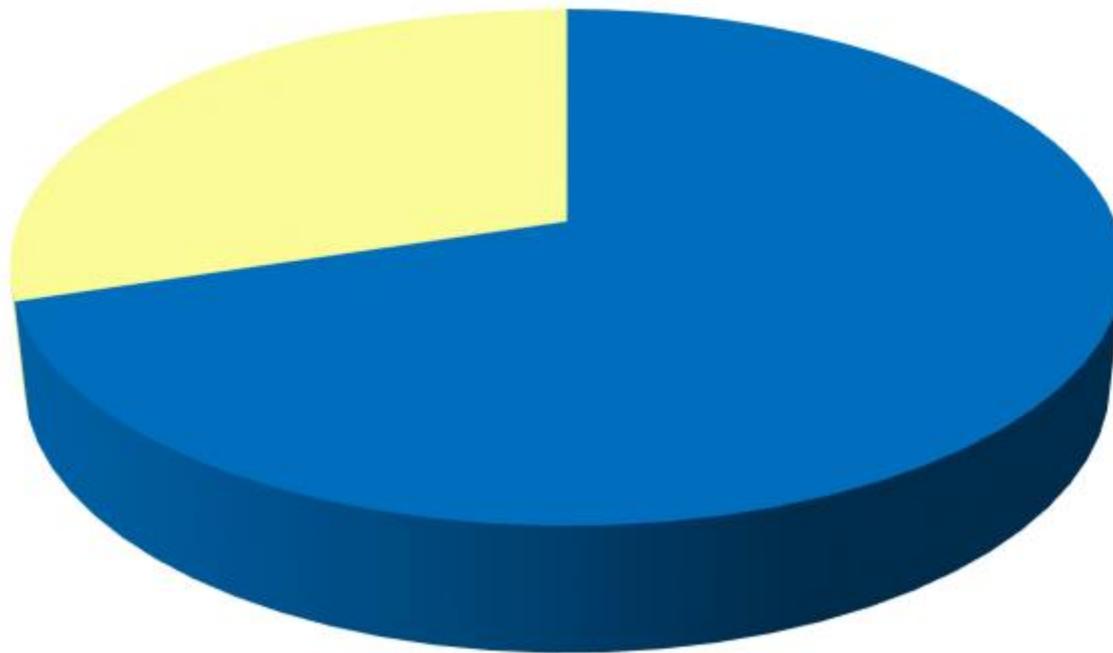


Figure 2: Treatment Setting

Setting	Percent
Outpatient Services	85.8%
Acute Inpatient Program	0.0%
Inpatient Rehabilitation Program	0.2%
Home-Based	0.1%
Preschool/Day Care	9.8%
Special Education Program	3.3%
Long-Term Residential	0.0%
Other	0.8%

Primary Funding Source

Funding Source	Percent
Medicaid(Managed care)	23.2%
Managed Care Plans	20.9%
Commercial Fee-for Service	19.1%
Medicaid (Fee-for-Service)	14.4%
Organization-Sponsored Assistance	5.0%
Children's Health Insurance Program	3.9%
IDEA	3.6%
Self-Pay	3.5%
Other Education Funding	1.9%
Medicare	1.6%
Rehabilitation Act (Section 504)	0.0%
Unknown	2.8%
Total	100%

Associated Medical Factors

Associated Medical Factors	Percent
Autism & Related Disorders	15.6%
Developmental Delay	9.8%
Syndrome	2.4%
Hearing Loss: Conductive	1.6%
Neuromotor Disorders	1.4%
Attention Deficit Disorder	1.3%
Craniofacial Factors	1.2%
Seizure Disorders	1.0%
Hearing Loss: Sensorineural	1.0%
Cerebrovascular Issues	0.5%
Anoxic Brain Damage	0.4%
Head Injury	0.4%
Cognitive Impairments	0.3%
Brain Tumor	0.2%
Other	6.6%
None	61.7%

Functional Communication Measures (FCMS) Treated

Disorder Category	Percent
Articulation/Intelligibility	58.5%
Cognitive Orientation	2.9%
Pragmatics	13.6%
Spoken Language Comprehension	40.4%
Spoken Language Production	59.3%
Swallowing	3.1%
Percentages may total more than 100% because a patient may have been scored on multiple FCMS	

Speech-Language Pathology Delivery Models

Predominant Service Delivery Model by FCM

Figure 5: Articulation/Intelligibility

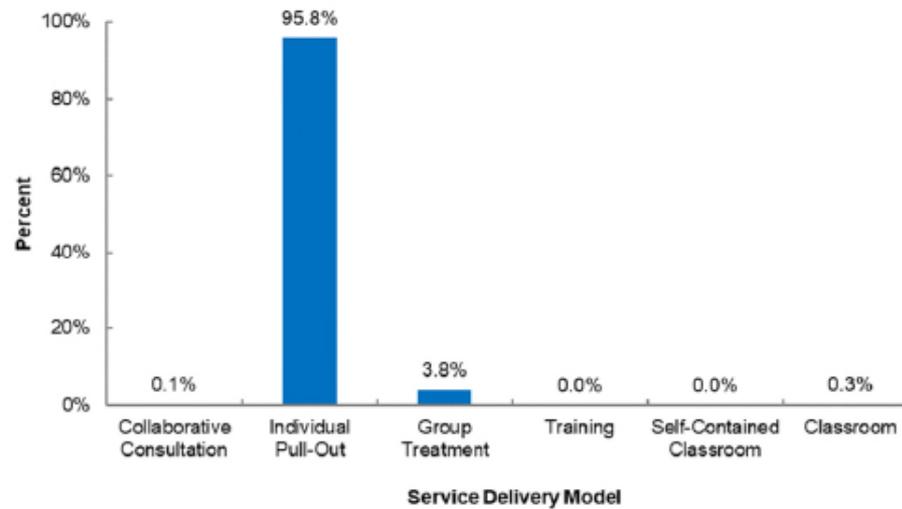
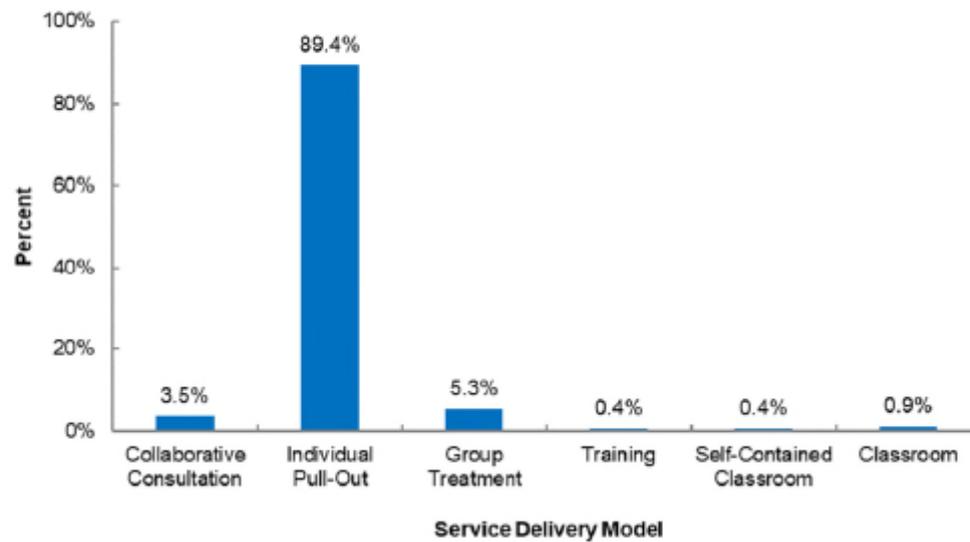


Figure 6: Cognitive Orientation



Functional Levels

Articulation/Intelligibility

Table 5: FCM Progress by Mean Number of Treatment Sessions and Treatment Time

Progress	Percent	Sessions	Time (hr)
No Progress	24.6%	16.1	10.2
Improved One Level	37.2%	26.3	17.0
Improved Multiple Levels	38.3%	34.0	20.5
TOTAL	100%	26.8	16.7

Table 6: Change in Functional Level from Level at Admission

Functional Level at Admission	No Progress	Improved One Level	Improved Multiple Levels
1	21.6%	17.9%	60.5%
2	17.9%	27.0%	55.1%
3	18.5%	36.5%	45.0%
4	25.4%	37.8%	36.7%
5	32.6%	42.4%	25.0%
6	41.3%	58.7%	N/A
All Levels	24.6%	37.2%	38.3%

Table 7: Change in Functional Level by Amount of Treatment

Hours of Treatment	No Progress	Improved One Level	Improved Multiple Levels
<10 hours	36.9%	36.1%	27.0%
10-19 hours	17.2%	38.9%	43.9%
20-29 hours	15.3%	37.2%	47.5%
30-39 hours	9.4%	34.7%	55.9%
40+ hours	10.0%	39.8%	50.1%
Total	24.6%	37.2%	38.3%

Adults in Healthcare – Acute Hospitals

REPORT HIGHLIGHTS

- Greater than 70% of patients who received speech and language services in the acute hospital setting were 60 years old and older.
- Most patients treated had a medical diagnosis of respiratory diseases (21.7%), cerebrovascular disease (16.3%), occlusion/TIA (4.9%) or CNS diseases (4.6%).
- The majority of patients (82.4%) had an SLP diagnosis of dysphagia.
- Most patients (68.0%) did not receive SLP services before being admitted into an acute hospital.
- In general, increases in number of sessions and hours of treatment for the top FCMs addressed resulted in more patients making progress.
- Most patients received three or more therapy sessions per week for 16-30 minutes per session.

Adults in Healthcare - Outpatient

REPORT HIGHLIGHTS

- Greater than 50% of patients who received speech and language services in the outpatient setting were 60 years old and older.
- More than half (55.9%) of the patients treated had a medical diagnosis of cerebrovascular disease, CNS diseases, head injury, or respiratory diseases .
- The majority of patients had an SLP diagnosis of cognitive communication disorder, aphasia, dysphagia or voice disorder.
- More than half of patients (57.7%) did not receive SLP services before being admitted into an outpatient facility.
- Increases in number of sessions and hours of treatment for the top FCMs addressed resulted in more patients making progress.
- Most patients received two therapy sessions per week for 46-60 minutes per session.

Adults in Healthcare – Inpatient Rehab

REPORT HIGHLIGHTS

- Greater than 70% of patients who received speech and language services in the inpatient rehabilitation setting were 60 years old and older.
- The majority of patients had a medical diagnosis of either cerebrovascular disease (28.2%), respiratory diseases (9.5%), mental disorders (8.8%) or CNS diseases (7.9%).
- The majority of patients had an SLP diagnosis of cognitive communication disorder (66.5%) or dysphagia (46.0%).
- Most patients (46.3%) did receive SLP services before being admitted into an inpatient rehabilitation facility.
- Increases in number of sessions and hours of treatment for the top FCMs addressed resulted in more patients making progress.
- Most patients received five or more therapy sessions per week for 31-45 minutes per session.

Adults in Healthcare – Skilled Nursing Facility

REPORT HIGHLIGHTS

- Greater than 50% of patients who received speech and language services in the skilled nursing setting were 80 years old and older.
- Most patients treated had a medical diagnosis of mental disorders (17.8%), cerebrovascular disease (15.0%), respiratory diseases (14.4%), or CNS diseases (12.9%).
- The majority of patients had an SLP diagnosis of dysphagia (59.7%) or cognitive communication disorders (49.5%).
- Almost half of patients (44.7%) did not receive SLP services before being admitted into a skilled nursing facility.
- Increases in number of sessions and hours of treatment for the top FCMs addressed resulted in more patients making progress.
- Most patients received five or more therapy sessions per week for at least 31-45 minutes per session.

Conclusion

- Lives are changed with improved communication.
- Those of us without a disorder, take it for granted. We give not thought to it. It is automatic.
- Our mission is simply to make communication, a human right, accessible and achievable by all.

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